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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/763,747	Applicant(s) TACHAUER ET AL.
	Examiner Jeff Wollschlager	Art Unit 1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 January 2008.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-27 and 50-53 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/1449)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed January 29, 2008 has been entered. Claims 1, 27 and 53 are currently amended. Claims 28-49 have been canceled. Claims 1-27 and 50-53 are pending and under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-27 and 50-53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 1, 27 and 53, the limitation "substantially rigid" does not appear to be supported by the original disclosure. The examiner notes that while paragraph [0079] discloses employment of the fastener as a mold insert, this does not appear to demonstrate possession of "substantially rigid" sheet form base material as claimed. Claims 2-26 and 50-52 are rejected as dependent claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27 and 50-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "substantially rigid" in claims 1, 27 and 53 is a

relative term which renders the claim indefinite. The term "substantially rigid" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claims 2-26 and 50-52 are rejected as dependent claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-13, 16-20, 25, 27 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al. (US 5,933,927).

Regarding claims 1 and 27, Miller et al. teach providing a sheet of material with protruding stems and engagable fastener elements (Figure 1 and 2) wherein the fastener elements (112) may be partially crushed by a thermoforming method (i.e. heated calendar roll) to form a fastener element with a non-planar topography (col. 5, lines 32-col. 6, lines 31; col. 9, lines 36-66).

The examiner notes that Miller et al. disclose that when the fastener elements are crushed they are no longer functional (col. 9, lines 57-60). However, Miller et al. also disclose that the fasteners may only be partially crushed. Accordingly, the examiner concludes that the fastener elements are reasonably understood to have some remaining functionality when they are only partially crushed. Also, in an alternative interpretation of the term "functional male fastener elements", the examiner notes that the crushed/partially crushed fastener elements are

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crushed/partially crushed to provide a finger grip. As such, the crushed/partially crushed fastener members are still "functional".

As to claim 2, Miller et al. teach the claimed process (Figure 2).

As to claims 3-5, and 10-12, Miller et al. teach or suggest the claimed variants (Figure 1 and 2). Additionally, Miller et al. teach a variety of methods, citing a variety of US patents, may be employed to form the stems (col. 5, lines 67-col. 6, line 31).

As to claims 7-9, Miller et al. employ a thermoplastic (col. 5, lines 50-51; col. 7, lines 31-44), such as polypropylene (col. 6, line 67) or polyethylene (col. 7, line 1) or plasticized PVC (col. 7, line 38).

As to claim 13, Miller et al. form a solid sheet (Figure 1 and 2).

As to claims 16-18, Miller et al. disclose a thickness of 0.025 mm to 0.5 mm (col. 6, line 42-67).

As to claims 19, 20 and 53, Miller et al. disclose the calendaring temperature is between 240 – 300 °F (Example 2).

As to claim 25, the sheet of Miller et al. is intrinsically thermoformed into a predetermined shape configured to fit into a correspondingly sized mold cavity.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-18 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubowik (US 4,870,725) in view of Neeb et al. (US 2002/0169435).

Regarding claim 1, Dubowik teaches a method of making a bi-stable/pop-through touch fastener wherein a flexible sheet material and a holding means of unitary construction are provided with male fastener elements (col. 1, lines 25-37) attached to and extending from an upper face of the fastener (Abstract; Figure 6; Figure 7). The shape of the fastener of Figures 6 and 7 is achieved through vacuum forming the one unitary piece of plastic (col. 4, lines 9-16). The examiner notes that vacuum forming is a specific type of thermoforming. Further, while Dubowik teaches the fastener material is suitably supplied by VELCRO (col. 1, lines 25-37), Dubowik does not expressly teach the male fastener elements are molded integrally with the base of the fastener.

However, Neeb et al. discloses a method of making bi-stable fastener elements wherein the touch fastener is provided by VELCRO (assignee of the Neeb et al. application) and has its male fastener components integrally molded with the base of the fastener (Figure 19; paragraphs [0074-0075]).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a fastener with the male fastener elements molded integrally with the base of the fastener in the method of Dubowik, as suggested by Neeb et al., because Dubowik teaches that VELCRO is a suitable fastener material and Neeb et al.

discloses a method of making VELCRO for bi-stable fastener applications. Further, Neeb et al. suggest that fasteners with male fastener elements that are molded integrally with the base of the fastener are an equivalent alternative form of fastener employed in the art.

As to claims 2-5, Neeb et al. disclose the same claimed process of producing the fastener material (Figure 19; paragraphs [0074-0075]).

As to claims 6, 7 and 21 Neeb et al. disclose employment of cross-linkable and thermoplastic materials, noting, for example, that the hooks and backing are generally produced from the same material (paragraph [0063, 0070, 0074]; Figures 15, 16A-16C, and 19).

As to claims 8, 9 and 13, Neeb et al. disclose, polyethylene, polyesters, polypropylene, polyvinyl chloride or other suitable sheet materials (paragraph [0063, 0070]). Dubowik disclose sheet plastics (col. 3, lines 18-30).

As to claims 10-12, Dubowik disclose a variety of loop engaging heads (col. 1, lines 25-37) and Neeb et al., which incorporates US 4,794,028 by reference at paragraph [0063]), disclose a variety of ways to form the loop engageable heads. The examiner further notes that such means of forming the loop engageable heads (e.g. contact or non-contact methods of forming the heads; hook shaped mold cavities that form the stem and the hook at the same time or a subsequent melting/compressing of a portion of an upstanding previously formed stem to form the head) are well-known and conventional in the art.

As to claim 14, Neeb et al., incorporates Kennedy et al. (US 5,260,015) at paragraph [0074]. Kennedy et al. teach that foam is a suitable material for forming a base material (Example XIII).

As to claim 15, Dubowik employ vacuum forming (col. 3, lines 18-30; col. 4, lines 9-16) to produce concave and convex fasteners (Figure 6 and 7).

As to claims 16-18, Neeb et al. disclose thicknesses between 0.5 mm to about 5 mm (paragraph [0063]).

As to claim 22, Dubowik disclose and undulating surface (Figure 7).

As to claims 23 and 24, Dubowik disclose a bow shape with a flange (Figure 6).

As to claim 25, Dubowik teach the fastener is vacuum formed to fit into a cavity having a predetermined shape (Figure 8).

Claims 19 and 20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubowik (US 4,870,725) in view of Neeb et al. (US 2002/0169435), as applied to claims 1-18 and 21-25, and further in view of Kurfman (US 4,115,619).

As to claims 19 and 20, the combination teaches the method as set forth above. Further, Dubowik teach vacuum forming the plastic and Neeb et al. teach in general that the process parameters, including temperature will be optimized/determined for different materials (paragraph [0075]). However, Dubowik does not expressly disclose what temperature to employ. However, Kurfman provides disclosure regarding conventional thermoforming processes, such as vacuum forming, wherein the determination of the thermoforming temperature is disclosed to be between the glass transition temperature up to and even above the melting point of the polymer (col. 3, lines 24-60; col. 6, lines 60 – col. 7, lines 22).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have optimized and determined the suitable thermoforming temperature within the claimed range while practicing the vacuum forming method of Dubowik, as suggested by Kurfman, since Kurfman teaches the thermoforming temperature is selected based upon the transition and melting temperature of the polymers.

The examiner further notes that the Kurfman reference is only applied for its teaching regarding thermoforming plastic materials. Accordingly, Dubowik and Kurfman are analogous art and are combinable as set forth above.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dubowik (US 4,870,725) in view of Neeb et al. (US 2002/0169435), as applied to claims 1-18 and 21-25 above, and further in view of Tidemann et al. (US 5,738,816).

As to claim 26, the combination teaches the method as set forth above. Dubowik does not teach forming a framework structure having rectangular apertures. However, Tidemann teach that it is known in the art to thermoform material into a framework structure having rectangular apertures (Figure 1; Figure 7).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Dubowik and to have formed a framework structure having rectangular apertures as suggested by Tidemann since Tidemann suggest such a shape and structure is known to have desirable commercial properties. Further, the examiner notes that one having ordinary skill would have readily determined the suitable shape of the sheet base for various applications from the teaching of Dubowik.

Claim 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubowik (US 4,870,725) in view of Neeb et al. (US 2002/0169435) and further in view of Tidemann et al. (US 5,738,816).

Regarding claim 27, Dubowik teaches a method of making a bi-stable/pop-through touch fastener wherein a flexible sheet material and a holding means of unitary construction are provided with male fastener elements (col. 1, lines 25-37) attached to and extending from an

upper face of the fastener (Abstract; Figure 6; Figure 7). The shape of the fastener of Figures 6 and 7 is achieved through vacuum forming the one unitary piece of plastic (col. 4, lines 9-16). The examiner notes that vacuum forming is a specific type of thermoforming. Further, while Dubowik teaches the fastener material is suitably supplied by VELCRO (col. 1, lines 25-37), Dubowik does not expressly teach the male fastener elements are molded integrally with the base of the fastener.

However, Neeb et al. discloses a method of making bi-stable fastener elements wherein the touch fastener is provided by VELCRO (assignee of the Neeb et al. application) and has its male fastener components integrally molded with the base of the fastener (Figure 19; paragraphs [0074-0075]).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a fastener with the male fastener elements molded integrally with the base of the fastener in the method of Dubowik, as suggested by Neeb et al., because Dubowik teaches that VELCRO is a suitable fastener material and Neeb et al. discloses a method of making VELCRO for bi-stable fastener applications. Further, Neeb et al. suggest that fasteners with male fastener elements that are molded integrally with the base of the fastener are an equivalent alternative form of fastener employed in the art.

Further, Dubowik does not teach continuously thermoforming the bi-stable fastener to produce a plurality of fasteners. However, Tidemann et al. disclose a continuous thermoforming process wherein a continuous substrate of material is continuously formed into a desired shape (Figure 7).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Dubowik and to have continuously produced a plurality of thermoformed articles as suggested by Tidemann et al. for

the purpose of increasing the productivity and reducing the cost of the process as is routinely practiced in the art. Further, the examiner notes that modifying a batch process to a continuous process has been held to only require routine skill.

Claims 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubowik (US 4,870,725) in view of Neeb et al. (US 2002/0169435) as applied to claims 1-18 and 21-25, and further in view of Kenney et al. (US 5,725,928).

As to claims 50-52, the combination teaches the method as set forth above. Dubowik does not teach employment of magnetically attractive material in the fastener. However, Kenney et al. teach a method of forming a touch fastener that includes magnetic attractants (Abstract).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Dubowik and to have employed a magnetic attractant, as suggested by Kenney et al., because Kenney et al. suggest such an attractant makes the product suitable for additional applications. Further, the magnetic attractants would increase the bond strength between the fastener and certain substrates.

Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dubowik (US 4,870,725) in view of Neeb et al. (US 2002/0169435) and further in view of Kurfman (US 4,115,619).

Regarding claim 53, Dubowik teaches a method of making a bi-stable/pop-through touch fastener wherein a flexible sheet material and a holding means of unitary construction are provided with male fastener elements (col. 1, lines 25-37) attached to and extending from an upper face of the fastener (Abstract; Figure 6; Figure 7). The shape of the fastener of Figures 6

and 7 is achieved through vacuum forming the one unitary piece of plastic (col. 4, lines 9-16). The examiner notes that vacuum forming is a specific type of thermoforming. Further, while Dubowik teaches the fastener material is suitably supplied by VELCRO (col. 1, lines 25-37), Dubowik does not expressly teach the male fastener elements are molded integrally with the base of the fastener.

However, Neeb et al. discloses a method of making bi-stable fastener elements wherein the touch fastener is provided by VELCRO (assignee of the Neeb et al. application) and has its male fastener components integrally molded with the base of the fastener (Figure 19; paragraphs [0074-0075]).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a fastener with the male fastener elements molded integrally with the base of the fastener in the method of Dubowik, as suggested by Neeb et al., because Dubowik teaches that VELCRO is a suitable fastener material and Neeb et al. discloses a method of making VELCRO for bi-stable fastener applications. Further, Neeb et al. suggest that fasteners with male fastener elements that are molded integrally with the base of the fastener are an equivalent alternative form of fastener employed in the art.

Further, Neeb et al. teach in general that the process parameters, including temperature will be optimized/determined for different materials (paragraph [0075]). However, Dubowik does not expressly disclose what temperature to employ. However, Kurfman provides disclosure regarding conventional thermoforming processes, such as vacuum forming, wherein the determination of the thermoforming temperature is disclosed to be between the glass transition temperature up to and even above the melting point of the polymer (col. 3, lines 24-60; col. 6, lines 60 – col. 7, lines 22).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have optimized and determined the suitable thermoforming temperature within the claimed range while practicing the vacuum forming method of Dubowik, as suggested by Kurfman, since Kurfman teaches the thermoforming temperature is selected based upon the transition and melting temperature of the polymers.

The examiner further notes that the Kurfman reference is only applied for its teaching regarding thermoforming plastic materials. Accordingly, Dubowik and Kurfman are analogous art and are combinable as set forth above.

Response to Arguments

Applicant's arguments filed January 29, 2008 have been fully considered, but they are not persuasive. Applicant argues that Miller uses a heated roll to form fastening portions on the distal ends of stems and that as such, Miller does not teach thermoforming a sheet already having male fastener elements. This argument is not persuasive for two reasons. Initially, the examiner submits that the argument suggests that the "stems" of Miller are not reasonably understood to be "male fastener elements". This argument is not persuasive. The examiner notes that the "male fastener elements" of claim 1 require "a stem molded integrally with and extending from a portion of the upper face of the sheet form base" and that a "loop engageable head" is not required to be part of the "male fastener element" until claim 10. As such, the stems of Miller are reasonably understood to be male fastener elements as set forth in claim 1. Secondly, the examiner submits that Miller et al. teach that the thermoformed finger grips may be made by calendering a web of stems OR a web of fully formed mechanical fasteners (col. 9, lines 36-49). As such, Miller et al. teach thermoforming a sheet that already contains fully

formed male fasteners having stems and loop engageable heads to form the finger grips. The examiner submits both interpretations anticipate the claims.

Applicant argues that the combination of Dubowik and Neeb et al. fails to teach a "substantially rigid" sheet form base because the final product produced by the combination of Dubowik and Neeb et al. is bistable. This argument is not persuasive. The examiner submits that to the extent the limitation "substantially rigid" is supported by the original disclosure and is understood to limit the claims as a relative term the combination of Dubowik and Neeb et al. employs a substantially rigid sheet form base. Dubowik et al. and Neeb et al. employ a plastic base form sheet that is thermoformable and that is produced in the same manner set forth in the instant disclosure (e.g. instant claim 2 and Figure 19 of Neeb et al). Additionally, Dubowik et al. further disclose employment of metal materials as being suitable (col. 3, lines 26-32), and Neeb et al. teach reinforcing the thermoplastic material with metal strips to facilitate production of the bistable fastener (col. 9, lines 53-56).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 5,884,374 (Figure 3A and col. 3); US 6,511,701 (col. 3, col. 7, col. 11); US 6,919,504 (Figure 16; col. 5, col. 16).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W./
Examiner, Art Unit 1791

May 7, 2008

/Monica A Huson/
Primary Examiner, Art Unit 1791